

the length of the base, iii imbricated, with 9-11 secondary sensoria, arranged along its whole length, iv with three sensoria, v with sometimes one sensorium half-way along. Proportions 15, 15, 65, 50, 50 (23+54), total length 1 mm. Head with one median and two lateral ocelli. *Rostrum* reaching the hind coxae. *Prothorax* with a strong lateral spine. *Abdomen* with five pairs of

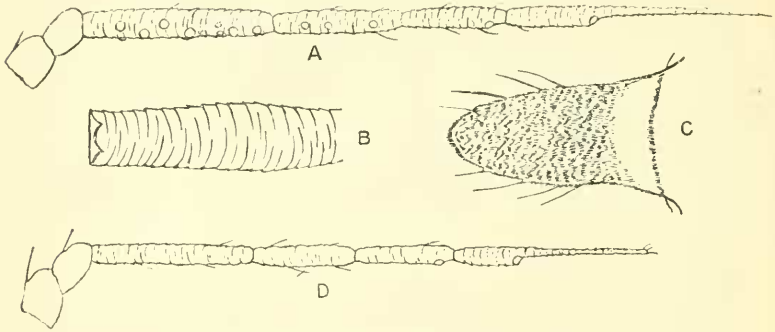


Fig. 2.—*Aphis tripolii*, sp. n. Alate ♀: A, Antenna; B, Cornicle; C, Cauda; D, Antenna of apterous ♀.

marginal papillae on segments 1-4, and 7. *Cornicles* dark brown, imbricated, a little longer than the cauda, and slightly broader at the base than the apex, .18 mm. long. *Cauda* dark brown, with four marginal hairs, .16 mm. long. Fore legs pale brown, middle and hind pairs pale brown, with the tips of the femora, tibiae, and tarsi black. Length: femora i .28 mm., iii .5 mm.; tibiae i .54 mm., iii .80 mm.; tarsi i .10 mm., iii .10 mm.

Length 1.5 mm.

Shoeburyness, Essex, 31.viii.1919 (*K. G. Blair*) on *Aster tripolium*. Co-types in the Brit. Mus.

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A NEW SYCOPHAGINE (AGAONIDAE-CHALCIDOIDEA) GENUS AND SPECIES FROM THE GOLD COAST.

BY JAMES WATERSTON, B.D., B.Sc.

The position of the remarkable form described below may be seen from the following tables:—

AGAONIDAE.

♀ ♀.

Mandibles with leaf-like striate or minutely denticulate appendage; articulated* palpi absent	AGAONINAE.
Mandibles without appendage; articulated palpi present	SYCOPHAGINAE.

* In *Ceratosten* there is sometimes on the 1st maxilla at the side a rod-like setigerous process of doubtful homology.

SYCOPHAGINAE.

♀ ♀.

Maxillary palpus with 1, labial 2, antenna with 13 joints.

.....SYCOPHAGA Westw. (1840).

Maxillary palpus 2, labial 1, antenna 11-jointed. No joint in the funicle unusually broad.....CROSSOGASTER Mayr (1885).

Maxillary palpus 3, labial 2, antenna 11-jointed. Funicle medianly broadened and tapered both towards the club and the ring-joint; second joint widest.

.....SERES, gen. nov.

Maxillary palpus 4, labial 2, antenna 11-jointed. First funicular joint much wider than the others.....SYCOECUS Waterst. (1914).

NOTE.—*Platyscapus* Motsch., which is presumed to be a Sycophagine, should be separable from any of the above by the 9-jointed antennae.

In the *Sycophaginae* there is evidently a considerable variation in the palpal joint formulae which is noteworthy in view of the uniformity prevailing through long series of genera in other families of the Chalcidoidea. This variability, however, does not necessarily imply a distant relationship between the genera listed above. The peculiar life-conditions of these tiny wasps makes it probable, indeed, that groups exhibiting differences in structure quantitatively great are phylogenetically closely connected. The many striking structural modifications of the *Agaonidae* are largely for biting, digging, rasping, and clearing away of vegetable tissue, and in such changes, affecting as they do the mandibles and head, the trophi are liable to be involved. In the Agaonine series, at least, the absence of palpi and the presence of the mandibular appendage are plainly correlated. It is interesting to note by what varied means the same result is achieved in this family. In *Blastophaga*, *Agaon*, etc., the rasping lamina is fixed anteriorly to the base of the mandible. In *Sycoecus* the rasp is the modified fore tibial spur, which is carried forward below the head by the elongate coxa and femur to rest in approximately the position occupied by the mandibular appendage in the other genera. In *Seres* the tibia itself has become a stout rasp and scoop combined, carried forward as in *Sycoecus* by the elongate coxa and femur.

SERES, gen. nov.

Head very elongate; eyes moderately large, mouth-edge with two somewhat angular lateral lobes between which is the broadly truncated projecting clypeus. Toruli midway between ocelli and clypeal edge. Facial impression long and narrow. Antennae 11-jointed; scape, pedicel, two ring joints, four funicular, and three in club. Funicle and club compressed. Mandibles robust, the right three or four, the left three dentate; one or more of the teeth in each long, stout, and falcate; base of the mandible with strong curved process extending into the head for muscular attachments. Maxillary palpus 3-jointed, the labial

2-jointed. Pronotum porrect, a little shorter than the entire mesonotum, the two together barely longer than the head. Propodeal spiracles circular. Wings post-marginal, shorter than the radius, and both much exceeded by the marginal. Discal ciliation sparse and obsolescent. Fore legs much modified; the coxae elongate. Femur oblong, stout. Tibia short, bent, armed dorsally with sharp peg-like spines. Tarsus normal, slender, as are also the mid and hind legs. In all the tarsi the joints, except the 5th, bear a pair of spinose bristles, preapical and ventral in position. Abdomen compressed, tergites deeply incised posteriorly. Segments 4 and 5 longest. Spiracles very broadly oval. Ovipositor rather stout, short, decurved. Sternites 1-2 medianly incised posteriorly, while 3-5 are produced; the 5th is in profile ploughshare-shaped and longer than the rest taken together.

Genotype the following species:—

Seres armipes, sp. n.

A blackish-brown species in which the ground-colour is completely masked by brilliant blue-green metallic reflections, which are strongest anteriorly, particularly on the head. Abdomen duller. Mandibles dark castaneous. Trophi pale. Antennae castaneous; coxae and femora mainly blackish brown. Tibiae and tarsi paler. Wings clear, glossy, almost invisible in balsam; veins very faintly embrowned.

Head: length (depth) .87 mm.; across the vertex the breadth is $\frac{1}{2}$ and at the mouth-edge $\frac{1}{3}$ of the length. Eyes $\frac{1}{4}$ as long as the head and separated by $\frac{3}{4}$ of the breadth across the frons. Toruli distinctly below the base-line of the eyes; small, circular, contiguous. Ocellar triangle a little more than right angled anteriorly. Integument strongly chitinised, smooth, polished. Frontal surface generally bare, but there are a few bristles (minute) along the orbits and one or two above each of the lateral clypeal lobes. Antennae .75 mm. long. Scape slender (7:1), parallel-sided, with about a dozen short bristles along the dorsal edge, and the same number on the inner aspect with about 8 very minute ventrally. Pedicel (3:1) not quite half as long as the scape, with about a dozen bristles mainly on the inner surface. Ring-joints stout, each with one dorsal and one ventral bristle. The normal funicular joints and the club segments are in the ratio 12, 13, 13, 14, 15, 11, 11; in the same scale the respective breadths of the funicular joints are 17, 22, 20, 17, while the club is 16 at the first suture. Sensoria numerous, long, and stout: 1st funicular with about 12, the 2nd 18, 3rd, 4th, and first two club segments about 14, while the last segment has 8. There is a minute cone-shaped terminal sense-organ armed with a short apical bristle and others more minute. Trophi: cardo narrow, L-shaped; stipes bare; maxillary palpus 8:5:7, with its greatest breadth (2) at the apex of the 1st joint, all the joints with one moderately long preapical bristle, the third with, in addition, a short terminal bristle $\frac{1}{4}$ the length of the joint itself. Labial palpus (11:11), the first joint bare, the second with 2 short preapical bristles and another $\frac{1}{2}$ as long as the supporting joint. *Thorax + Propodeon* 1.2 mm. Pronotum in the form of a truncated isosceles triangle $\frac{1}{3}$ longer than broad and $\frac{1}{2}$ the length of the combined scutum and scutellum. Spiracle slightly prominent, with one stout bristle in front and a number of minute ones scattered irregularly, chiefly anterolaterally. Parapsidal furrows ending just inside the axillary sutures.

Mid lobe with a group of small bristles on each side before $\frac{1}{2}$ just inside the furrows. Axillae narrow, with 2-3 minute bristles and 1 longer and stouter at the posterior angle. On the scutellum at the posterior edge are two strong bristles set wide apart. Propodeon, spiracles set near the side at $\frac{1}{2}$, with a few minute bristles behind. There are 3-4 stout stiff bristles on the upper edge of the metapleuron and a few (minute) below. Fore wings about $2\frac{3}{4}$ as long as broad; length 1.7 mm., breadth .6 mm. Submarginal: marginal: radius; postmarginal in ratio 48: 18: 11: 9. On submarginal 8-9 bristles; on marginal + postmarginal at the edge 11-12, and on these veins themselves are 9 in all. Radius bare, with 1 bristle at base. Basal third of wing practically bare, but distally and arranged mainly parallel with the long axis of the wing are about a dozen irregular hair-lines; the cilia short, weak, and wide apart; Marginal fringe short and sparse. Hind wings 4 times as long as broad; length 1.3 mm., breadth .3 mm. The neuration .8 mm. in length. The submarginal cell distally extremely narrow, extending linearly nearly to the hooks. At the base of the submarginella where it lies along the costa are 6-7 bristles, 2 at the upturn, and 6-8 towards the hooks. Behind the neuration and extending to the tip of the wing is a sparsely set row of weak cilia.

Fore legs: coxa (3:1) about $\frac{2}{3}$ the length of the femur (3:1), which is of nearly equal breadth throughout. Tibia about $\frac{1}{2}$ of the femur in length, with about 20 spines, 10 extremely stout and peg-like along the apical edge and about 8 similar behind and 2-3 much weaker near the base. Tarsus 36: 18: 12: 10: 33. Mid legs slender. Femur $\frac{1}{2}$ of the tibia in length, spur of the latter definitely preapical. Sutures of tarsus very oblique. Tarsus in ratio 95: 60: 40: 27: 40. Hind legs: tibia without definite apical comb. 2nd spur short, stout, peg-like, only $\frac{1}{2}$ of the 1st. Two similar small spines among the stout bristles at the upper apical angle. Tarsus in ratio 75: 60: 40: 27: 50.

Abdomen: tergites 1-2 subequal, the second being slightly shorter; the third is about $\frac{1}{5}$ longer and equal to the 6th but just shorter than the 5th; the 4th is half as long again as the 1st. Stylet short (not as long as the basal breadth of the valve of the ovipositor), with 2 subapical and 2 apical bristles of which the longest is nearly twice the process itself. Tergites 1-4 have posteriorly 3 median slit-like incisions (the central slit on tergite 1 being carried in to $\frac{1}{3}$ the length of the sclerite), with 1-3 others indistinctly marked on each of the overlaps. On 5 and 6 respectively there is 1 short median slit. On tergite 6 there are about 8 strong bristles between, and 3-4 minute around, the spiracles anteriorly with 3-4 behind. 2 stout bristles (1:1) between the stylets. On the sheath of the ovipositor are 2-3 rows of short bristles increasing in length distally.

Length about $4\frac{1}{4}$ mm., of which the ovipositor occupies .7 mm.; alar expanse $3\frac{3}{4}$ mm.

Hab. GOLD COAST, Accra, in lab. vi.1919 (*J. W. S. Macfie coll.*).

Type, ♀ in Brit. Mus. Communicated through the kindness of Prof. Newstead, F.R.S.

Imperial Bureau of Entomology, London.

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